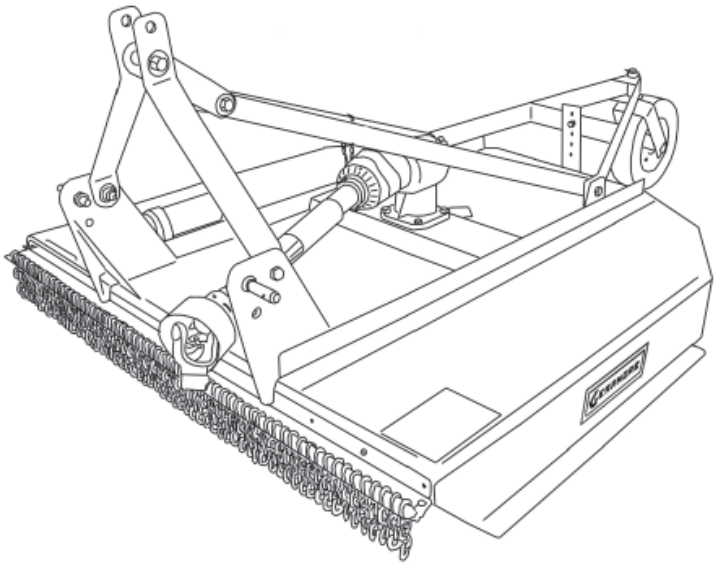
GEARMORE®

ROTARY MOWER



Operation, Service & Parts Manual For
Shear Pin Models:
RC20-48P, RC20-60P, & RC20-72P
Slip Clutch Models:
RC20-48SC, RC20-60SC, & RC20-72SC

January 2006

Form: RC20Mower.pm7

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TO THE OWNER

TO THE OWNER:

Read this manual before using your rotary mower. This manual is provided to give you the necessary operating and maintenance instructions for keeping your rotary mower in top operating condition. Please read this manual thoroughly. Understand what each control is for and how to use it. Observe all safety signs on the machine and noted throughout the manual for safe operation of the implement. Keep this manual handy for ready reference.

Like all mechanical products, it will require cleaning and upkeep. Lubricate the mower as specified.

Use only original manufacturer service parts. Substitute parts will void warranty and may not meet standards required for safe and satisfactory operation.

RETAIL CUSTOMER'S RESPONSIBILITY

It is the retail customer and/or Operator's responsibility to read the Operator's Manual, to operate, lubricate, maintain, and store the product in accordance with all instructions and safety procedures. Failure of the operator to read the Operator's Manual is a misuse of this equipment.

It is the retail customer and/or Operator's responsibility to inspect the product and to have any part(s) repaired or replaced when continued operation would cause damage or excessive wear to other parts or cause safety hazard.

It is the retail customer and/or Operator's responsibility to deliver the product to the authorized Dealer, from whom it was purchased, for service or replacement of defective parts that are covered by warranty. Repairs to be submitted for warranty consideration must be made within ninety (90) days of failure.

It is the retail customer and/or Operator's responsibility for any cost incurred by the Dealer for traveling to or hauling of the product for the purpose of performing a warranty obligation or inspection.

CUSTOMER INFORMATION

NAME: _____

PURCHASED FROM: _____

DATE OF PURCHASE: _____

MODEL NUMBER: _____

SERIAL NUMBER: _____

DEALER PREPARATION CHECKLIST

THIS CHECKLIST TO REMAIN IN OWNER'S MANUAL

IT IS THE RESPONSIBILITY OF THE DEALER TO COMPLETE THE PROCEDURES LISTED BELOW BEFORE THE DELIVERY OR THE SALE OF THIS IMPLEMENT TO THE CUSTOMER.

Dealer Preparation Check List

- ❑ 1. Implement is completely assembled.
- ❑ 2. Gearbox filled with oil. (See page 12)
- ❑ 3. All fittings lubricated. (See page 12)
- ❑ 4. All shields in place and in good condition.
- ❑ 5. All fasteners torqued to specifications given in Torque Chart. (See page 15)
- ❑ 6. Check PTO driveline. Make sure it is the correct length to operate rotary mower with intended tractor.
- ❑ 7. Check front of input gearbox shaft and make sure that snap ring is properly installed.
- ❑ 8. Check shear bolt for proper grade and installation.
- ❑ 9. All decals in place and readable. (See page 3)
- ❑ 10. Overall condition good (i.e. paint, welds, etc.).
- ❑ 11. Operator's manual has been given to owner and the owner has been instructed on the safe and proper use of the rotary mower.
- ❑ 12. Purchaser elects to delete deflectors. (front and rear rubber belt, front and rear chains)

WARNING

For Non-Agricultural use OSHA, ASAE, SAE, and ANSI standards require the use of Chain Guards or other protective guards at all times. Manufacturer strongly recommends the use of such guards for Agricultural uses as well, to reduce the risk of property damage, serious bodily injury or even death from objects thrown out by or from contact with the cutting blades.

Dealer's Signature:_____

Purchaser's Signature:_____

GENERAL SAFETY

WARNING

Never stand between tractor and mower while tractor is being backed to hitch

WARNING

Additional tractor front ballast may be needed for stable operation and transport of the 3-point hitch mounted mower. See tractor operator's manual for recommended weights.

WARNING

Do Not use PTO shaft adapters to change size of tractor PTO shaft. The correct driveline must be used to match tractor PTO shaft.

WARNING

The mower can fall from hydraulic system failure. To avoid serious injury or death, securely support cutter before working underneath.

WARNING

Avoid placing hands, feet or any other body parts beneath the mower while making height adjustments.

DANGER

Stay clear of rotating driveline. Do Not operate without driveline shields in place and in good condition. Failure to heed these warnings may result in personal injury or death.

DANGER

Rotating mower blades - stand clear until all motion has stopped. To avoid an accidental fall from tractor and possible injury by mower, it is recommended that tractor be equipped with rollover protective system (ROPS) and a seat belt be used by the operator for all mowing operations.

WARNING

All rotary mowers can discharge objects at high speeds which could result in serious injury to bystanders or passersby. Therefore, this mower is not to be operated along highways or in any area where people may be present unless all sides of the unit are enclosed by permanent bands that are in good repair.

DANGER

Do Not get under mower unless it is securely blocked in position. Accidental fall could cause serious injury or death.

WARNING

Failure to install retaining clip on input shaft will allow driveline to swing freely if bolt is sheared causing possible injury or death.

WARNING

Rotary mowers must be equipped with front and rear guards when operating in the vicinity of highways or in any area where people may be present.

SAFETY PRECAUTIONS

Most accidents occur because of neglect or carelessness. Avoid needless accidents by following all of the safety precautions listed below.

Machinery should be operated only by those who are responsible and are authorized to do so.

Stop the engine, lower implement, lock the brakes, and remove the ignition key before dismounting from the tractor.

Never stand between tractor and implement while tractor is being backed to hitch.

Loose fitting clothing should not be worn to avoid catching on various parts.

Detach implement in area where children normally do not play.

When performing adjustments or maintenance on an implement, first lower it to the ground or block it securely at a workable height.

Only a qualified operator should be permitted on tractor when in operation; ***no riders allowed.***

Make certain everyone is in the clear before starting tractor or raising or lowering implement.

Operate the tractor and implement only while in driver's seat.

Reduce speed when transporting mounted implements to avoid bouncing and momentary loss of steering control. A heavy load can cause instability of the tractor. Use extreme care during road travel. Slow down on turns and watch out for bumps. Tractor may need front counter-weights to counter-balance the weight of the implement.

Reduce speed on hillsides or curves so there is no danger of tipping.

Avoid driving too close to the edge of ditches or creeks.

Do not transport implement on public roads without reflectors and slow moving vehicle emblem in daylight and with approved warning lights at night and other periods of poor visibility.

Due to the width of some implements, use extra caution on highways, farm roads, and when approaching gates.

Always be sure the implement is in the proper position for transport.

Keep alert and watch the front as well as the rear when working with the implement.

ALWAYS KEEP CHILDREN AWAY FROM DANGER WHEN OPERATING TRACTOR AND IMPLEMENT.

EQUIP TRACTORS WITH ROLLOVER PROTECTION (ROPS) AND KEEP ALL MACHINERY GUARDS IN PLACE.

PLEASE WORK, DRIVE, PLAY, AND LIVE EACH DAY WITH CARE AND CONCERN FOR YOUR SAFETY AND THAT OF YOUR FAMILY AND FELLOW CITIZENS.

SAFETY DECALS

WARNING

ROTARY MOWERS MAY DISCHARGE OBJECTS AT HIGH SPEEDS, WHICH COULD RESULT IN SERIOUS INJURY TO BY-STANDERS OR PASSERS-BY.

- **DO NOT** OPERATE MOWER IN VICINITY OF OTHER PERSONS.
- KEEP ENCLOSED SIDES, PERMANENT BANDS, BELTING, HIGHWAY CHAINS OR OTHER FACTORY APPROVED DISCHARGE SHIELDS IN PLACE AND IN GOOD REPAIR.

WARNING

TO AVOID SERIOUS INJURY OR DEATH:

- READ OPERATOR'S MANUAL BEFORE OPERATING & FOLLOW ALL PRECAUTIONS. (CONTACT DEALER FOR MANUALS)
- KEEP SHIELDS AND GUARDS IN PLACE. KEEP CLEAR OF DRIVES AND BELTS.
- LOWER IMPLEMENT, STOP ENGINE AND REMOVE KEY BEFORE DISMOUNTING.
- SECURELY SUPPORT MOWER & REMOVE KEY BEFORE WORKING UNDERNEATH.
- NO RIDERS. **DO NOT** OPERATE MOWER IN VICINITY OF OTHER PERSONS.
- KNOW HOW TO STOP TRACTOR AND EQUIPMENT QUICKLY IN AN EMERGENCY.
- CLEAR MOWING AREA OF DEBRIS.
- ALLOW NO CHILDREN OR UNQUALIFIED PERSONS TO OPERATE EQUIPMENT.
- BE CAREFUL ON UNEVEN TERRAIN. DECREASE SPEED WHEN TURNING.
- **DO NOT** OPERATE MOWER IN TRANSPORT POSITION.

CAUTION

THIS IMPLEMENT IS DESIGNED TO OPERATE AT 540 RPM MAXIMUM TRACTOR PTO SPEED.

ALL DRIVELINE SHIELDS MUST BE KEPT IN PLACE.

WARNING

IMPLEMENT CAN FALL FROM HYDRAULIC SYSTEM FAILURE. TO AVOID SERIOUS INJURY OR DEATH:

- BLOCK UP OR SECURELY SUPPORT IMPLEMENT BEFORE WORKING UNDERNEATH.
- PURGE ALL AIR FROM HYDRAULIC SYSTEM BEFORE ATTEMPTING TO RAISE OR LOWER THIS IMPLEMENT.
- STAND CLEAR IF LOWERING OR RAISING IMPLEMENT.
- DO NOT USE HAND OR SKIN TO CHECK FOR HYDRAULIC LEAKS. USE CARDBOARD OR WOOD.
- HIGH PRESSURE OIL LEAKS CAN PENETRATE SKIN CAUSING SERIOUS INJURY AND GANGRENE. CONSULT A PHYSICIAN IMMEDIATELY.
- LOWER THE IMPLEMENT AND RELEASE HYDRAULIC PRESSURE BEFORE LOOSENING FITTINGS.
- REFER TO OWNER'S MANUAL FOR DETAILS.

DANGER

ROTATING DRIVELINE
CONTACT CAN CAUSE DEATH
KEEP AWAY

DO NOT OPERATE WITHOUT -

- ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS
- DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE.

DANGER

KEEP AWAY - ROTATING BLADES

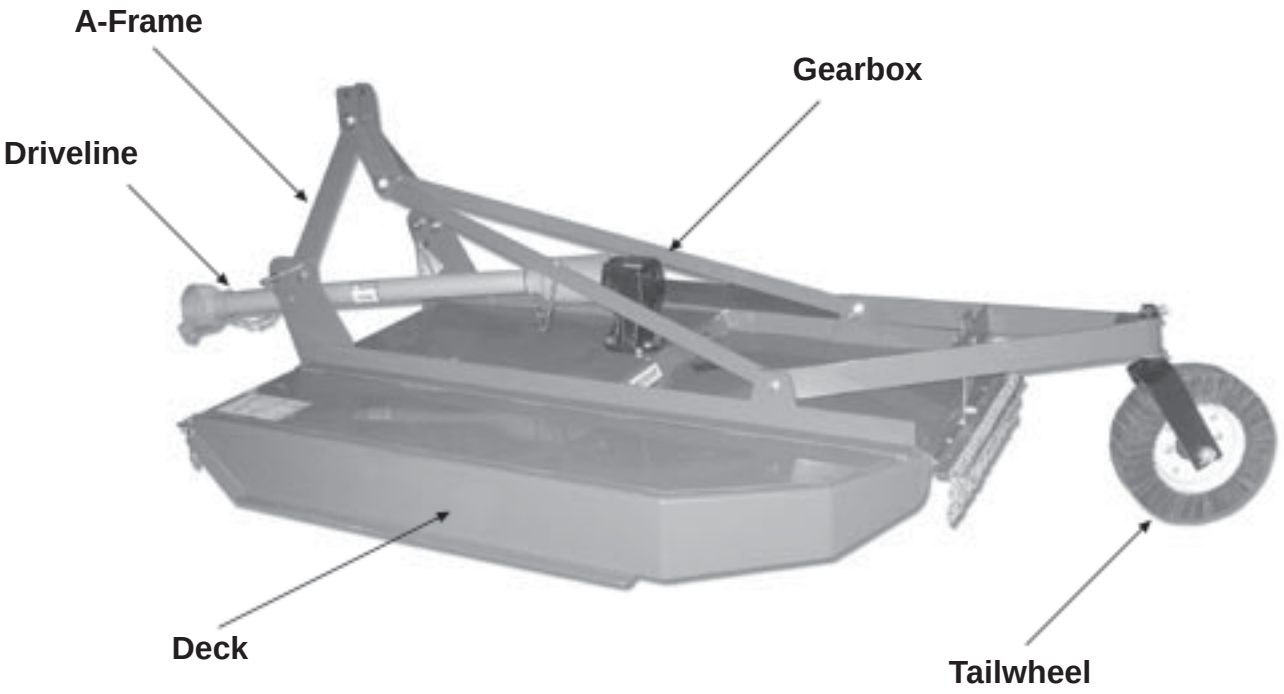
SERIOUS INJURY OR DEATH CAN RESULT FROM THROWN OBJECTS OR BLADE CONTACT

- **DO NOT** STAND ON OR NEAR MACHINE WHEN IN OPERATION
- **DO NOT** OPERATE WITH DEFLECTORS OR GUARDS REMOVED.
- ROPS (ROLLOVER PROTECTIVE SYSTEM) AND SEAT BELT EQUIPPED TRACTOR IS RECOMMENDED FOR OPERATOR USE IN ALL MOWING OPERATIONS.

SECTION 1 - DESCRIPTION

Your standard duty RC20 Rotary Mower has been carefully designed for cutting grass and small brush. This manual is provided to give you the necessary operation and maintenance instructions for keeping your rotary mower in excellent operating condition. Please read this manual thoroughly. Understand the purpose of the controls and how to use them. Observe all safety precautions on the machine and noted throughout this manual. If any assistance or additional information is needed, contact your authorized dealer. Each cutter has free-swinging blades which reduce the shock on impact when a stationary object is hit. A shear bolt through the input shaft protects the gearbox and driveline from damage on all models except models which have slip clutches.

Figure 1-1 Major Components



TECHNICAL SPECIFICATIONS

MODEL NO:	RC20-48	RC20-60	RC20-72
Cutting Width:	48"	60"	72"
Cutting Height:	1 1/2" - 9"	1 1/2" - 9"	1 1/2" - 9"
Cutting Capacity:	Up to 1" Diameter	Up to 1" Diameter	Up to 1" Diameter
Hitch:	Cat. I	Cat. I	Cat. I
Weight - Shear pin/Slip clutch:	480 / 500 lbs.	555 / 575 lbs.	675 / 690 lbs.
Gearbox Rating:	40 HP	40 HP	40 HP
Blade Size:	1/2" x 3"	1/2" x 3"	1/2" x 3"
Blade Tip Speed:	13,090 fpm	12,465 fpm	14,955 fpm
Deck Thickness:	11 Gauge	11 Gauge	11 Gauge
Side Skirt Thickness:	7 Gauge	7 Gauge	7 Gauge
Side Skirt Height:	7 3/4"	7 3/4"	7 3/4"
Type Tailwheel:	Laminated	Laminated	Laminated
Blade Carrier:	Round	Round	Round
Gearbox Protection:	Shear Bolt / Slip Clutch	Shear Bolt / Slip Clutch	Shear Bolt / Slip Clutch
Shear Bolt Size:	1/2" x 3" Grade 2	1/2" x 3" Grade 2	1/2" x 3" Grade 2
Recommended Tractor HP:	18 to 40	20 to 40	28 to 40

SECTION 2 - Preparation For Use

WARNING

NEVER STAND BETWEEN TRACTOR AND ROTARY MOWER WHILE TRACTOR IS BEING BACKED TO HITCH

WARNING

ADDITIONAL TRACTOR FRONT BALLAST MAY BE NEEDED FOR STABLE OPERATION AND TRANSPORT OF THE 3-POINT HITCH MOUNTED MOWER. SEE TRACTOR OPERATOR'S MANUAL FOR RECOMMENDED WEIGHTS.

WARNING

DO NOT USE PTO SHAFT ADAPTERS TO CHANGE SIZE OF TRACTOR PTO SHAFT. THE CORRECT DRIVELINE MUST BE USED TO MATCH TRACTOR PTO SHAFT.

A. Insure that all bolts and hitch pins on 3-point hitch are tightened. Hitches need no further adjustment.

B. Attach rotary mower to tractor 3-point hitch per tractor operator's manual. Do not attach driveline at this time. (figure 2-1)

C. Raise 3-point until front of mower is approximately 1 - 2 inches (25-51 mm) lower than rear for standard cut or until front of mower is 1 inch (35 mm) higher than rear for extra shredding. Shut down tractor. Securely block mower in position. For further explanation of rotary mower adjustment, see paragraph 3-2.

NOTE:
Due to the many variations in tractor/implement hitch points and corresponding differences in distances between tractor PTO shafts and implement input shafts, drivelines may need to be shortened as described in the following steps:

D. Raise and lower rotary mower to determine position with shortest distance between the tractor PTO shaft and gearbox input shaft. Shut down tractor leaving cutter in position of shortest distance. Securely block rotary mower in position.

E. Pull driveline apart. Attach outer (female) section to tractor PTO shaft. Pull on driveline section to be sure that yoke locks into place.

F. Hold driveline sections parallel to each other to determine if too long. Each section should end approximately 3 inches (76 mm) short of reaching universal joint shield on opposite section. If too long, measure 3 inches (76 mm) back from universal joint shield and mark on opposite section. (figure 2-2). Do this for both sections.

G. Raise and lower rotary mower to determine position with greatest distance between PTO shaft and gearbox input shaft. Shut down tractor leaving rotary mower in position of greatest distance. Securely block rotary mower in position.

PREPARATION FOR USE

Figure 2-1 (3-Point Hitch Points)

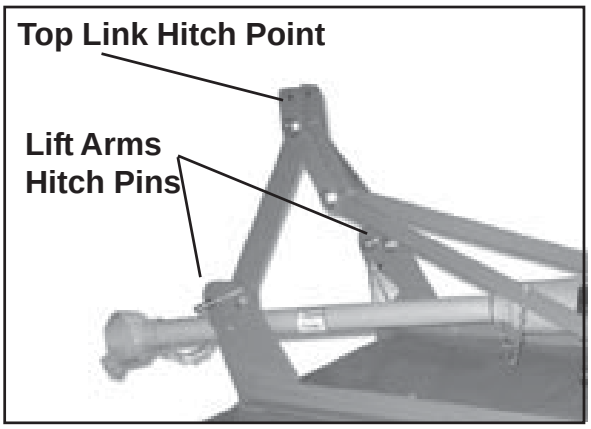
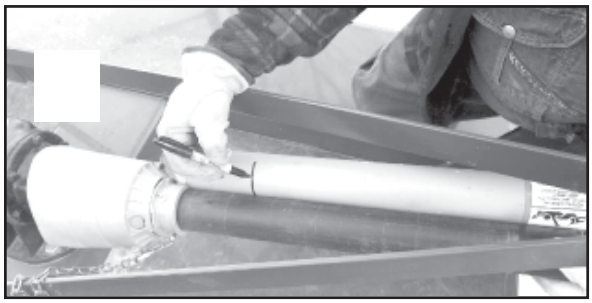
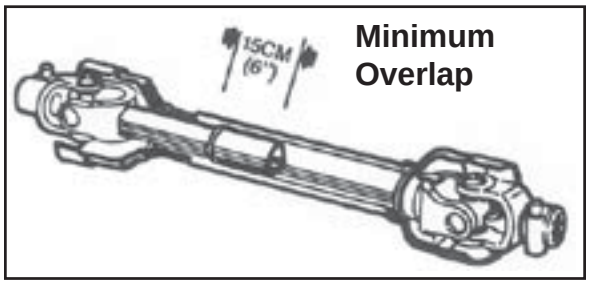


Figure 2-2



H. Hold driveline sections parallel to each other and check for a minimum of 6" (15cm) overlap. (Figure 2-3). If driveline has been marked for cutting, overlap will be the distance between two marks. If driveline has less than minimum overlap, do not use. Contact authorized dealer.

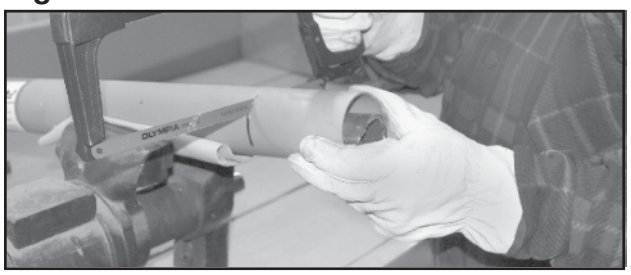
Figure 2-3



NOTE:
If driveline is the correct length, omit the following steps "I" through "L" and proceed to step "M".

I. Clamp driveline in a well padded vice to prevent damage to the shield. Cut off shield where marked. (Figure 2-4)

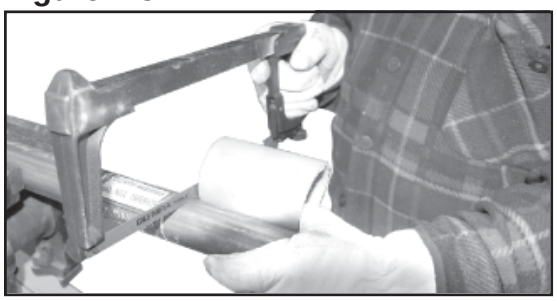
Figure 2-4



J. Using cut off section of shield as a guide, cut shaft the same amount. (Figure 2-5)

K. Repeat steps "I" and "J" to other driveline section.

Figure 2-5



L. Deburr ends of driveline sections and clean away all chips and fillings. (Figure 2-6)

M. Apply multi-purpose grease to inside of outer (female) driveline section. Assemble driveline and install on tractor and rotary mower. Pull on each driveline section to be sure yokes lock into place. Make certain driveline shielding is in place and in good condition.

Figure 2-6

N. Adjust lower lift arm(s) to level rotary mower right to lift. Refer to tractor operator's manual for instructions.

NOTE:
After attaching driveline to tractor, attach driveline shield chains from both ends of driveline shielding to stationary locations.

SECTION 3 - Operating Instructions

3-1 GENERAL SAFETY

Only qualified people should operate this machine. Operator should wear hard hat, safety glasses, and safety shoes. It is recommended that tractor be equipped with Rollover Protective Systems (ROPS) and a seat belt be used. Before beginning operation, clear work area of objects that may be picked up and thrown. Check for ditches, stumps, holes, or other obstacles that could upset tractor or damage rotary mower. Always turn off tractor engine, set parking brake, and allow rotary mower blades to come to a complete stop before dismounting tractor.

3-2 ADJUSTING FOR WORK

The rotary mower should be operated at the highest position which will give optimal cutting results. This will help prevent the blades from striking the ground, reducing blade wear and undue strain on the machine. For best results under heavier cutting conditions, always tilt the rotary mower approximately 2 inches (51mm) lower in the front. This tilt decreases horsepower requirements and increases potential ground speed. When fine shredding is desired, adjust rotary mower deck level or slightly lower in the rear. This will keep the foliage under rotary mower until thoroughly shredded. More power is required for shredding.

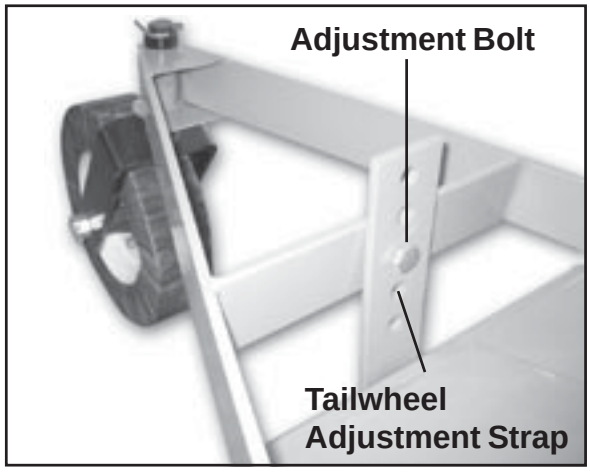
WARNING

THE MOWER CAN FALL FROM HYDRAULIC SYSTEM FAILURE. TO AVOID SERIOUS INJURY OR DEATH, SECURELY SUPPORT ROTARY MOWER BEFORE WORKING UNDERNEATH.

WARNING

AVOID PLACING HANDS, FEET OR ANY OTHER BODY PARTS BENEATH THE ROTARY MOWER WHILE MAKING HEIGHT ADJUSTMENTS.

Figure 3-1 Tailwheel Height Adjustment



Each rotary mower can be adjusted to several cutting heights. The RC20 can be adjusted to approximately 1-½" to 9" of cutting height. To adjust, raise rotary mower and block securely in position. Remove bolt from adjusting strap shown in Figure 3-1. Adjust tailwheel frame up or down and secure in desired position.

OPERATING INSTRUCTIONS

Tractor 3-point hitch top link must be adjusted so that rotary mower top link has a small amount of slack when in the work position. (See Figure 3-2)

Figure 3-2 Top Link Position

3-3 OPERATION

A. Perform BEFORE EACH USE maintenance listed in paragraph 4-1.
B. Start tractor per tractor operator's manual.
C. Raise/lower 3-point hitch to place mower in working position.
D. Look to be sure no one is near mower. WITH TRACTOR AT IDLE SPEED, SLOWLY ENGAGE PTO DRIVE.

DANGER

STAY CLEAR OF ROTATING DRIVELINE. DO NOT OPERATE WITHOUT DRIVELINE SHIELDS IN PLACE AND IN GOOD CONDITIO. FAILURE TO HEED THESE WARNINGS MAY RESULT IN PERSONAL INJURY OR DEATH.

E. Set tractor throttle for appropriate PTO speed (540 RPM).

WARNING

ROTATING MOWER BLADES STAND CLEAR UNTIL ALL MOTION HAS STOPPED. TO AVOID AN ACCIDENTAL FALL FROM TRACTOR AND POSSIBLE INJURY BY MOWER, IT IS RECOMMENDED THAT TRACTOR BE EQUIPPED WITH ROLLOVER PROTECTIVE SYSTEM (ROPS) AND A SEAT BELT BE USED BY THE OPERATOR FOR ALL MOWING OPERATIONS.

F. Place tractor in gear and proceed forward. Advance throttle to 540 PTO rpm. Tractor forward speed should be controlled by gear selection, not engine speed. For maximum cutting efficiency, forward speed should allow rotary mower to maintain a constant, maximum blade speed. If rotary mower stalls or tractor engine bogs, disengage PTO. Before re-engaging PTO, position rotary mower in a cut area and reduce tractor throttle to idle. If rotary mower continuously stalls, select lower gear and/or increase cutting height.

WARNING

ALL ROTARY MOWERS CAN DISCHARGE OBJECTS AT HIGH SPEEDS WHICH COULD RESULT IN SERIOUS INJURY TO BYSTANDERS OR PASSERS-BY. THEREFORE, THIS ROTARY MOWER IS NOT TO BE OPERATED ALONG HIGHWAYS OR IN ANY AREA WHERE PEOPLE MAY BE PRESENT UNLESS ALL SIDES OF THE UNIT ARE ENCLOSED BY PERMANENT BANDS THAT ARE IN GOOD REPAIR.

SECTION 4 - Maintenance

4-1 MAINTENANCE CHECKLIST

Perform scheduled maintenance as outlined below. Lower machine to ground, turn off tractor and set parking brake before doing maintenance inspections or work. All bolts should be torqued as recommended in the ***Torque Specifications*** unless otherwise indicated.

BEFORE EACH USE:

1. Check tractor tire air pressure. Refer to tractor operator's manual.
2. Check blades and spindles to be sure that no foreign objects such as wire or steel strapping bands are wrapped around them.
3. Check blade bolts for tightness. (Tighten to 325 ft./lbs. (814 NM) on models RC20)
4. Inspect blades for wear. Replace if necessary per paragraph 4-3. Always replace both blades on blade holder with two blades equal in weight.
5. Make certain driveline shields are in place and in good repair.
6. Inspect wheel for wear, damage, or foreign objects. (Repair or replace if necessary)
7. Perform BEFORE EACH USE lubrication per paragraph 4-2.
8. During operation, listen for abnormal sounds which might indicate loose parts, damaged bearings, or other damage.

AFTER EACH USE:

1. Clean all debris from rotary mower, especially under side of deck. When cleaning underside of deck, securely block machine into position.

4-2 LUBRICATE AS FOLLOWS: (See Figure 4-1 & 4-2)

NOTE:

The multi-purpose grease referenced in this section is a NLGI Grade 2 type grease.

BEFORE EACH USE:

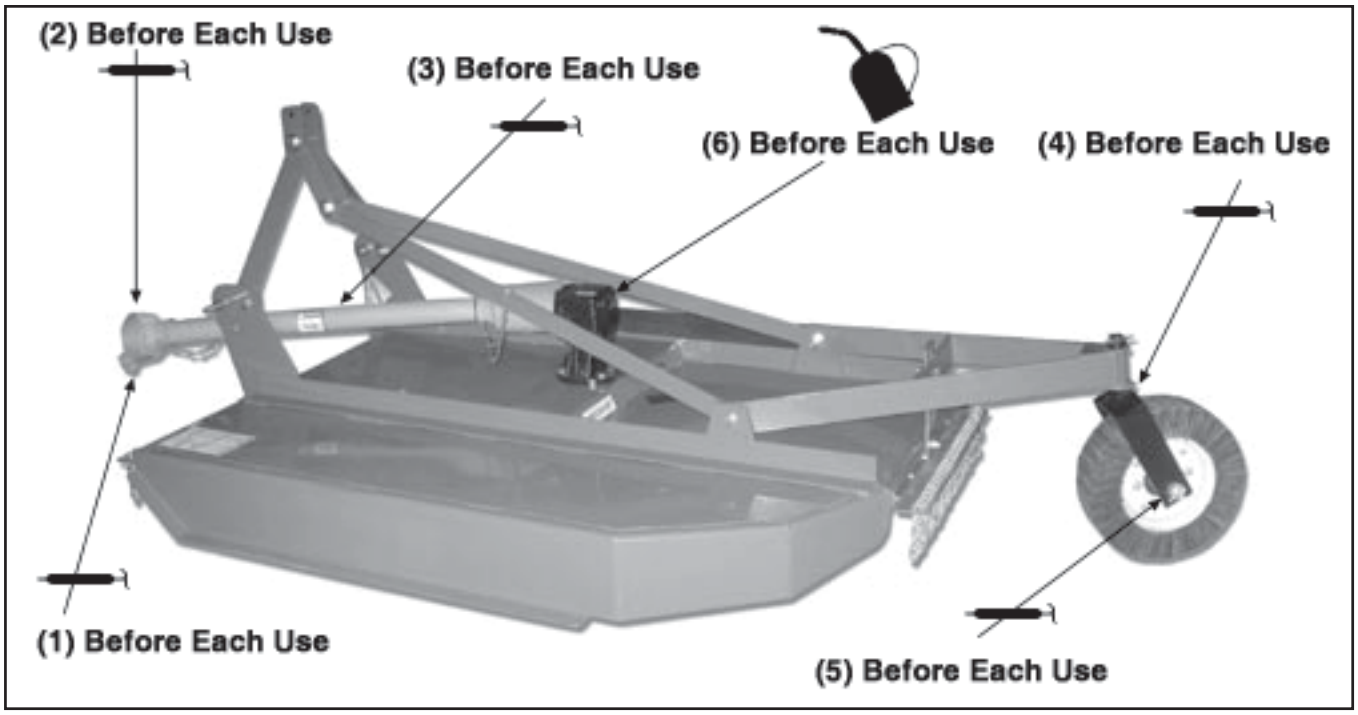
1. ***Driveline Universal Joints*** - Apply multi-purpose grease with a grease gun.
2. ***Driveline Guard*** - (See Figure 4-2) Apply 2-3 shots of multi-purpose grease with grease gun to plastic fitting.
3. ***Driveline*** - Disconnect PTO driveline, pull two sections apart and apply thin coat of multi-purpose grease to inside of outer female section. Re-assemble sections and install. Pull each section to be sure driveline and shields are securely connected. Make certain PTO shielding is in good condition.
4. ***Wheel Pivot Tube*** - Apply multi-purpose grease with grease gun.
5. ***Tailwheel*** - Apply multi-purpose grease with grease gun.
6. ***Gearbox*** - Check oil level by removing oil level check plug on side of gearbox. Add EP80W-90 gear oil if necessary to bring oil level to check plug hole. (Capacity of RC20 is 26/30 ounce)

AFTER EACH USE:

1. Drain and change the oil in your gearbox.
2. Check (and replace where necessary) blades, bolts, and nuts on the machine.
3. Clean machine and touch up any rust spots that may have appeared.
4. Replace any safety signs if damaged.
5. Store rotary mower in a clean dry location.

MAINTENANCE

Figure 4-1



4-3 BLADE REPLACEMENT

It is not necessary to remove the complete blade holder assembly to replace the blades. Blade bolts are accessible through a hole in the top of the mower deck. Always replace both blades on a blade holder using two blades having the same weight. Use only OEM replacement blades. (See Figure 4-3)

A. Raise rotary mower and securely block in position

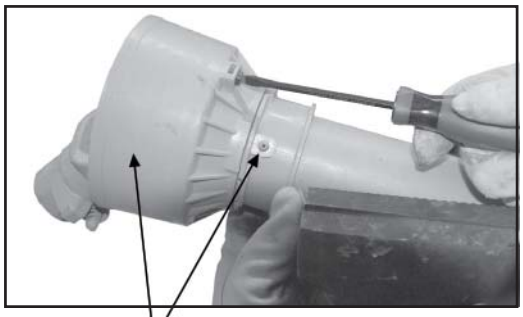
B. Remove nuts from blade bolts through the access hole in the mower deck (Figure 4-3). The RC20 requires a 1 $^{5}/_{16}$" socket.

C. Inspect blade bolt shoulder for wear. Replace if necessary.

D. Assemble new blades to blade holder using blade bolts, nuts, and lockwashers. Tighten nuts to 325 ft./lbs.

E. Check to be sure blades swing 360^{o} freely. If blades will not swing freely, remove, locate problem, and repair. Operating rotary mower when blades will not swing freely will cause excessive vibration, damaging implement.

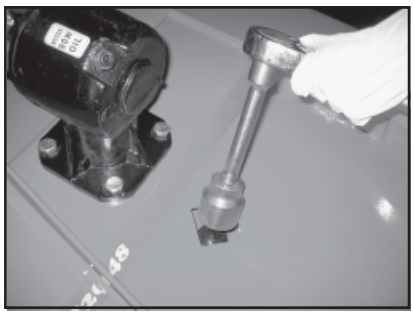
Figure 4-2



8 Hours

To remove yoke shield: Turn slotted head 90^{o} with screwdriver, remove turn screw and slide cover back.

Figure 4-3 Blade Removal



MAINTENANCE

DANGER

DO NOT GET UNDER ROTARY MOWER UNLESS IT IS SECURELY BLOCKED IN POSITION. ACCIDENTAL FALL COULD CAUSE SERIOUS INJURY OR DEATH.

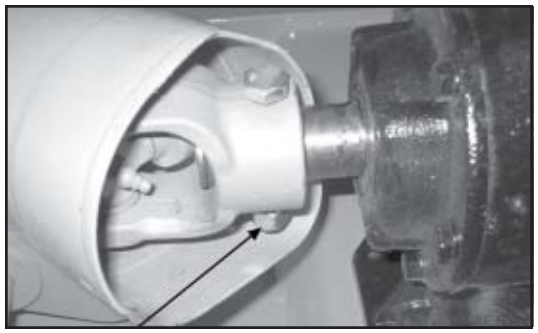
4-4 SHEAR BOLT REPLACEMENT (See Figure 4-4)

A. Slide yoke shield back. (See Figure 4-2)

B. Realign holes in yoke and shaft and remove sheared bolt with hammer and punch.

C. Install new shear bolt. Lock yoke shield into place.

Figure 4-4 Shear Bolt Replacement



(RC20 - ½" x 3", Grade 2 Shear Bolt)

WARNING

FAILURE TO INSTALL RETAINING CLIP ON INPUT SHAFT WILL ALLOW DRIVELINE TO SWING FREELY IF BOLT IS SHEARED CAUSING POSSIBLE INJURY OR DEATH.

4-5 SLIP CLUTCH OPERATIONAL CHECK

After the implement has been stored for **30 days or more,** perform the following operational check:

A. Loosen eight nuts retaining clutch springs 1/3 turn or until spring can be turned with fingers.

B. With tractor at idle speed, engage tractor PTO drive 2-3 seconds. Clutch should slip without turning blades. If clutch does not slip, contact your authorized dealer.

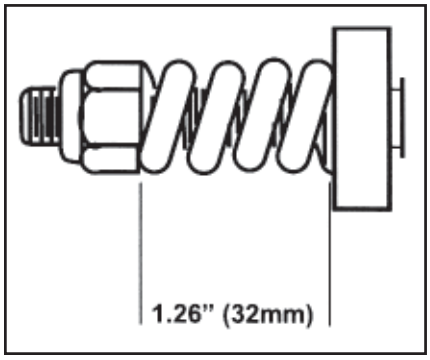
C. Retighten nuts to original position. Initial spring lengths are shown in Figure 4-5.

IMPORTANT:
FAILURE TO RETIGHTEN NUTS TO ORIGINAL POSITION MAY CAUSE DAMAGE TO IMPLEMENT AND/OR TRACTOR DUE TO IMPROPER SLIP CLUTCH TORQUE SETTING

4-6 SLIP CLUTCH ADJUSTMENT

The slip clutch is factory preset to the correct torque for protecting implement and tractor. Periodic adjustment is recommended; refer to section 4-5. Should adjustments be needed, first check to be sure all spring lengths are the same. Initial spring lengths are shown in Figure 4-5. If necessary, adjust nut on any spring that is unequal. Adjust all eight spring retaining nuts 1/3 of a turn (2 flats on a nut) and check clutch slippage. If further adjustment is necessary, do so in 1/3 turn increments. Adjust only to provide sufficient torque to prevent slippage under normal conditions. Occasional slippage is normal for driveline protection. If satisfactory results cannot be obtained, consult your authorized dealer.

Figure 4-5 Spring Lengths



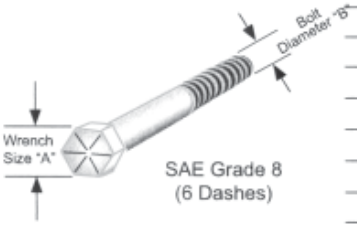
TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

AMERICAN
Bolt Head Markings

SAE Grade 2
(No Dashes)

SAE Grade 5
(3 Dashes)

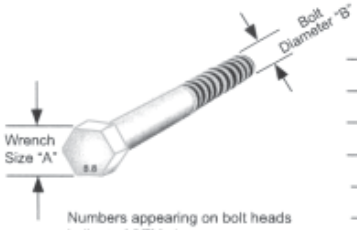


SAE Grade 8
(6 Dashes)

Proper torque for American fasteners used on manufacturer implement.
Recommended Torque in Foot Pounds (Newton Meters).*

WRENCH SIZE(IN.)"A"	BOLT DIAMETER (IN.)"B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 -20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 2/ UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 -18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 -24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 -14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 -12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
15/16	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
15/16	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4 - 10 UNC	144(195)	266 (360)	376 (509)
1-1/8	3/4 - 16 UNF	192 (260)	297 (406)	420 (569)
1-5/16	7/8 - 9 UNC	166 (225)	430 (583)	606 (821)
1-5/16	7/8 - 14 UNF	184 (249)	474 (642)	668 (905)
1-1/2	1-8 UNC	250 (339)	644 (873)	909 (1232)
1-1/2	1 - 12 UNF	274 (371)	705 (955)	995 (1348)
1-1/2	1-14 UNF	280 (379)	721 (977)	1019 (1381)
1-11/16	1-1/8 - 7 UNC	354 (480)	795 (1077)	1288 (1745)
1-11/16	1-1/8 -12 UNF	397 (538)	890 (1206)	1444 (1957)
1-7/8	1-1/4 - 7 UNC	500 (678)	1120 (1518)	1817 (2462)
1-7/8	1-1/4 - 12 UNF	553 (749)	1241 (1682)	2013 (2728)
2-1/16	1-3/8 - 6 UNC	655 (887)	1470 (1992)	2382 (3228)
2-1/16	1-3/8 -12 UNF	746 (1011)	1672 (2266)	2712 (3675)
2-1/4	1-1/2 - 6 UNC	870 (1179)	1950 (2642)	3161 (4283)
2-1/4	1-1/2 - 12 UNF	979 (1327)	2194 (2973)	3557 (4820)

METRIC



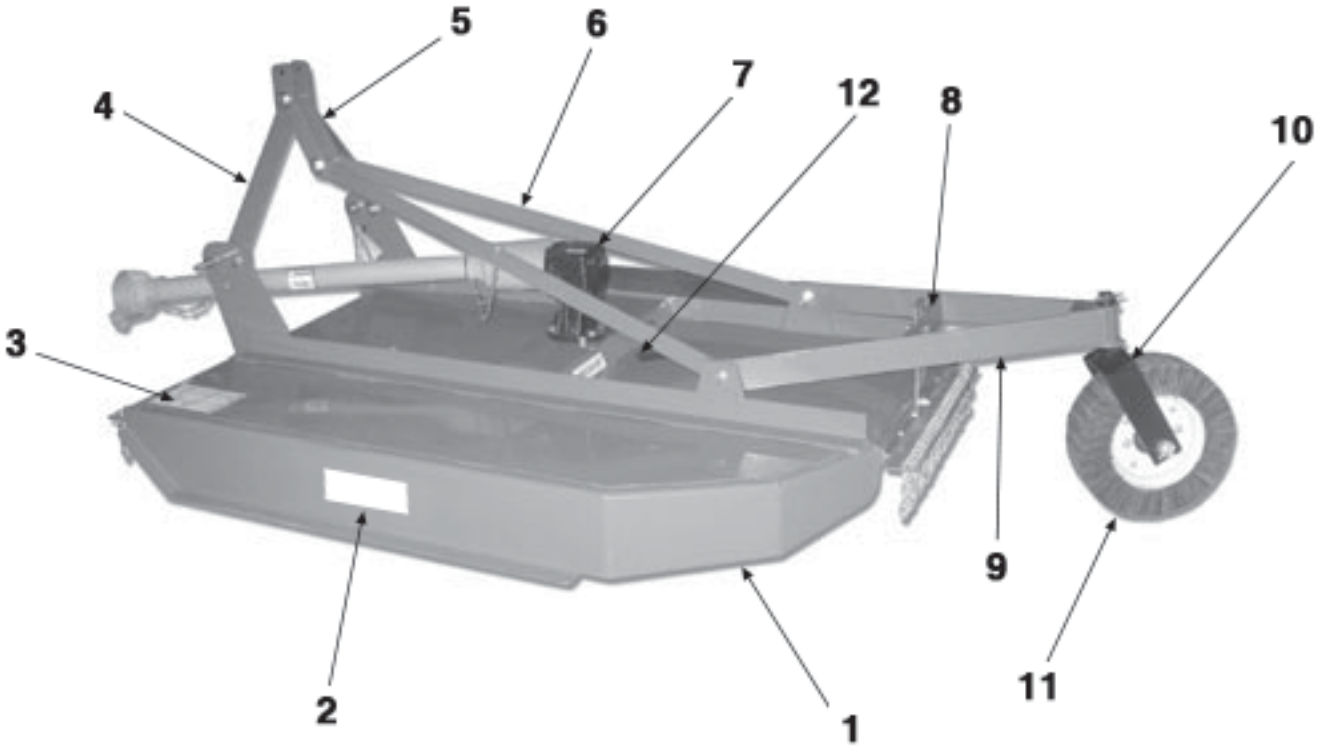
Numbers appearing on bolt heads indicate ASTM classes.

*Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.

Proper torque for metric fasteners used on manufacturer emplement.
Recommended Torque in Foot Pounds (Newton Meters).*

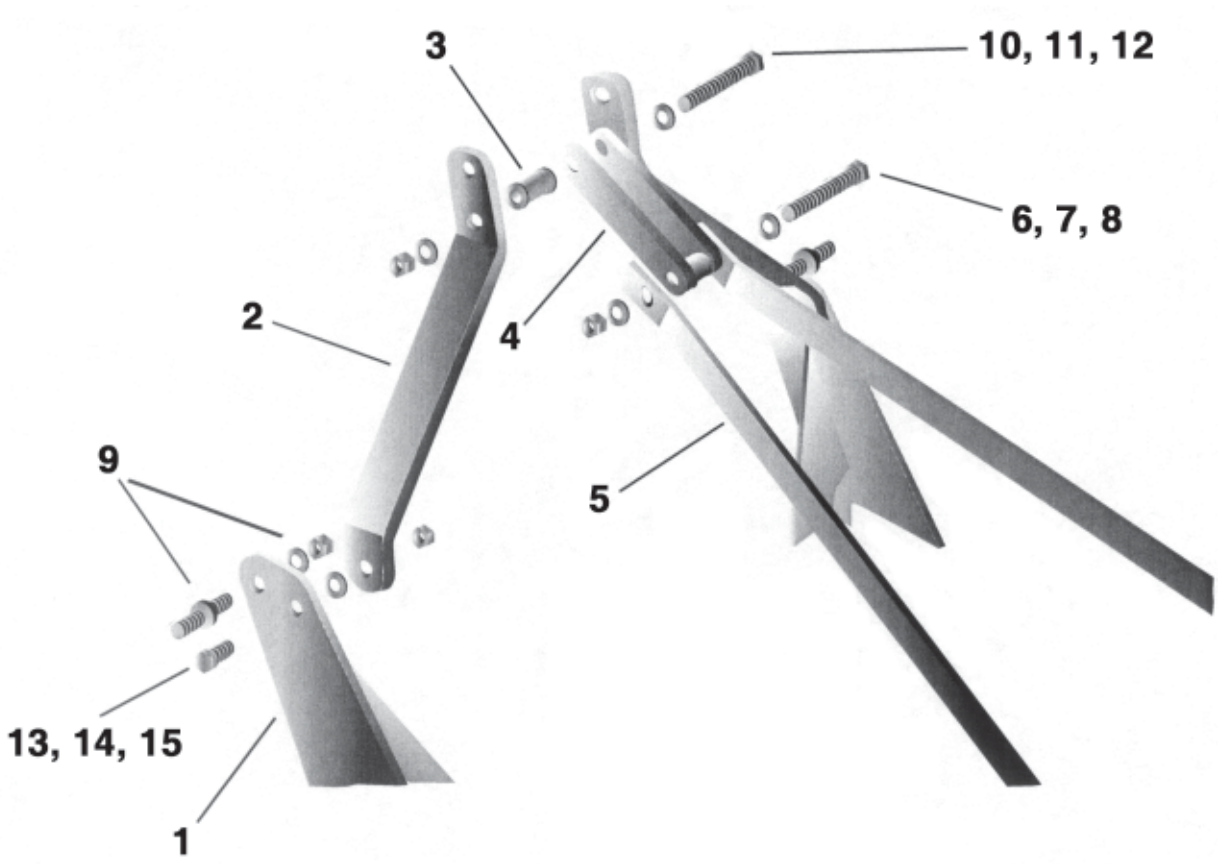
WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)
33	22		443 (600)		611 (828)
36	24	211 (286)	563 (763)		778 (1054)
41	27		821 (1112)		138(1542)
46	30	418 (566)	1119 (1516)		1547(2096)

SECTION 5 - Parts



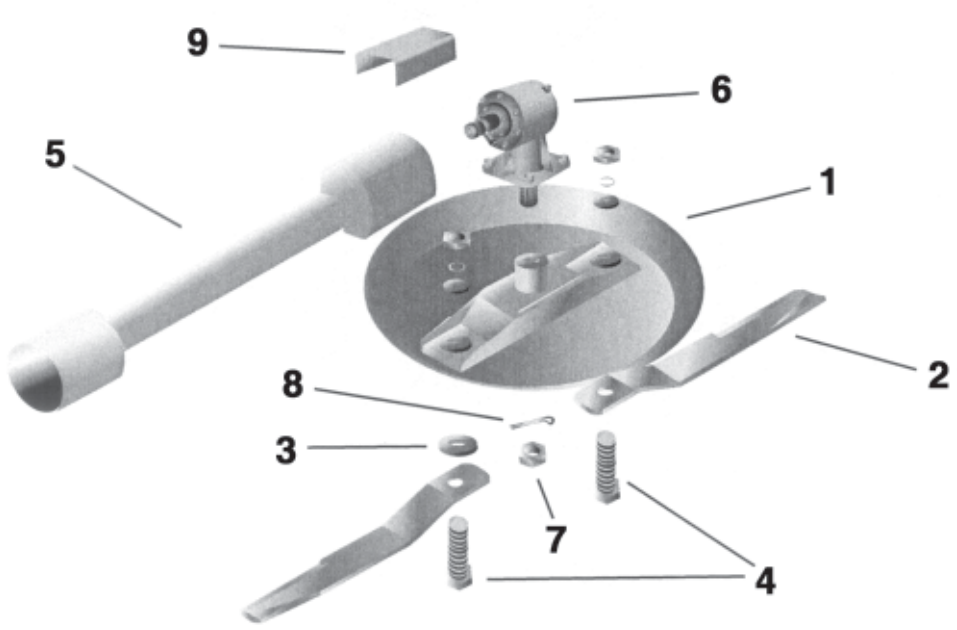
REF#	QTY.	PART NO.	DESCRIPTION
1	1	N/A	Deck Assembly
2	2	100107	Brand Label
3	1	300101	Warning / Danger Decal
4	2	300102	Top Link Mount
5	1	300103	Hitch Pivot Link
6	2	300104	Lift Strap - 48"
6	2	300138	Lift Strap - 60"
6	2	300139	Lift Strap - 72"
7	1	300105	Gearbox - 40 HP
8	1	300107	Tailwheel Adjustment Strap
9	1	300108	A-Frame (Tailwheel)
10	1	300109	Tailwheel Fork
11	1	300110	Tailwheel Assembly
12	1	300111	Dust Cover (Black Plug)

ARTICULATED HITCH ASSEMBLY



REF#	QTY.	PART NO.	DESCRIPTION
1	1	N/A	Hitch Mount Lug
2	2	300102	Top Link Mount
3	1	300112	Lift Link Bushing
4	1	300103	Hitch Pivot Link
5	2	300104	Lift Strap 48"
5	2	300138	Lift Strap 60"
5	2	300139	Lift Strap 72"
6	1	100110	Hitch Bolt 3/4" x 2 1/2", Grade 5
7	2	100111	Flat Washer 3/4"
8	1	100112	Lock Nut 3/4"
9	2	100101	Lift Pin (with lockwasher & nut)
10	1	100102	Link Pivot Bolt 3/4" x 5", Grade 5
11	2	100111	Flat Washer 3/4"
12	1	100112	Lock Nut 3/4"
13	1	100110	HItch Bolt 3/4" x 2 1/2", Grade 5
14	1	100111	Flat Washer 3/4"
15	1	100112	Lock Nut 3/4"

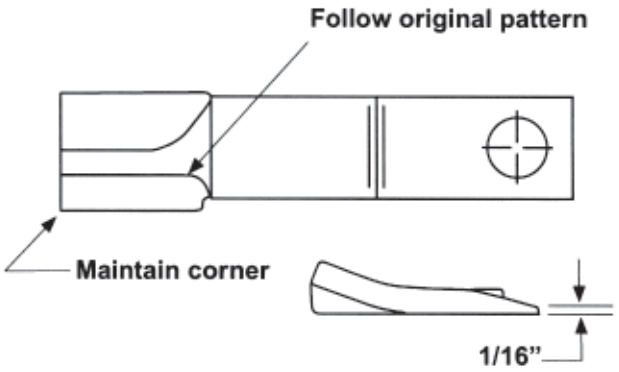
GEARBOX & BLADE PAN ASSEMBLY



REF#	QTY.	PART NO.	DESCRIPTION
1	1	300113	Blade Pan 48" & 60"
1	1	300114	Blade Pan 72"
2	1	300125	Blade Set (2 blades) 48"
2	1	300126	Blade Set (2 blades) 60" & 72"
3	2	300117	Blade Washer
4	2	300118	Blade Bolt Assembly
5	1	300119	Standard PTO Shaft w/Shear Pin 48" & 60"
5	1	300120	Standard PTO Shaft w/Shear Pin 72"
5	1	300121	Standard PTO Shaft w/Slip Clutch 48" & 60"
5	1	300122	Standard PTO Shaft W/Slip Clutch 72"
6	1	300105	40 HP Gearbox
7	1	300123	Blade Hub Nut
8	1	100113	Cotter Pin - Gearbox
9	1	300124	Slip Clutch Shield

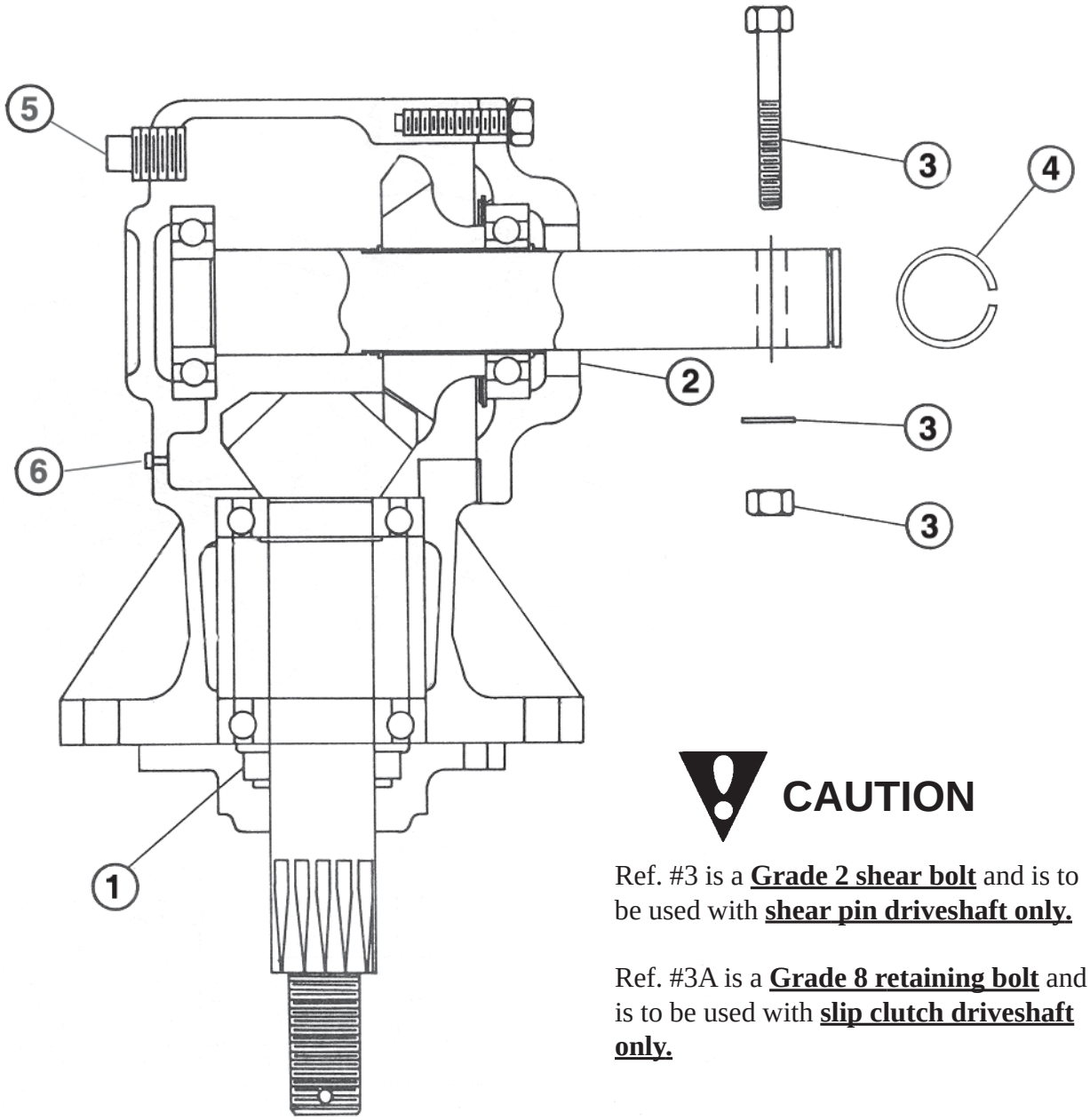
IMPORTANT

When sharpening blades, grind each blade the same amount to maintain balance. Replace blades in pairs. Unbalanced blades will cause excessive vibration which can damage gearbox bearings. Vibration may also cause structural cracks to mower deck.



Sharpen both blades at the same time to maintain balance. Follow original sharpening pattern. Do not sharper blade to a razor edge, but leave at least a 1/16" blunt edge. Do not sharpen back side of blade.

GEARBOX ASSEMBLY



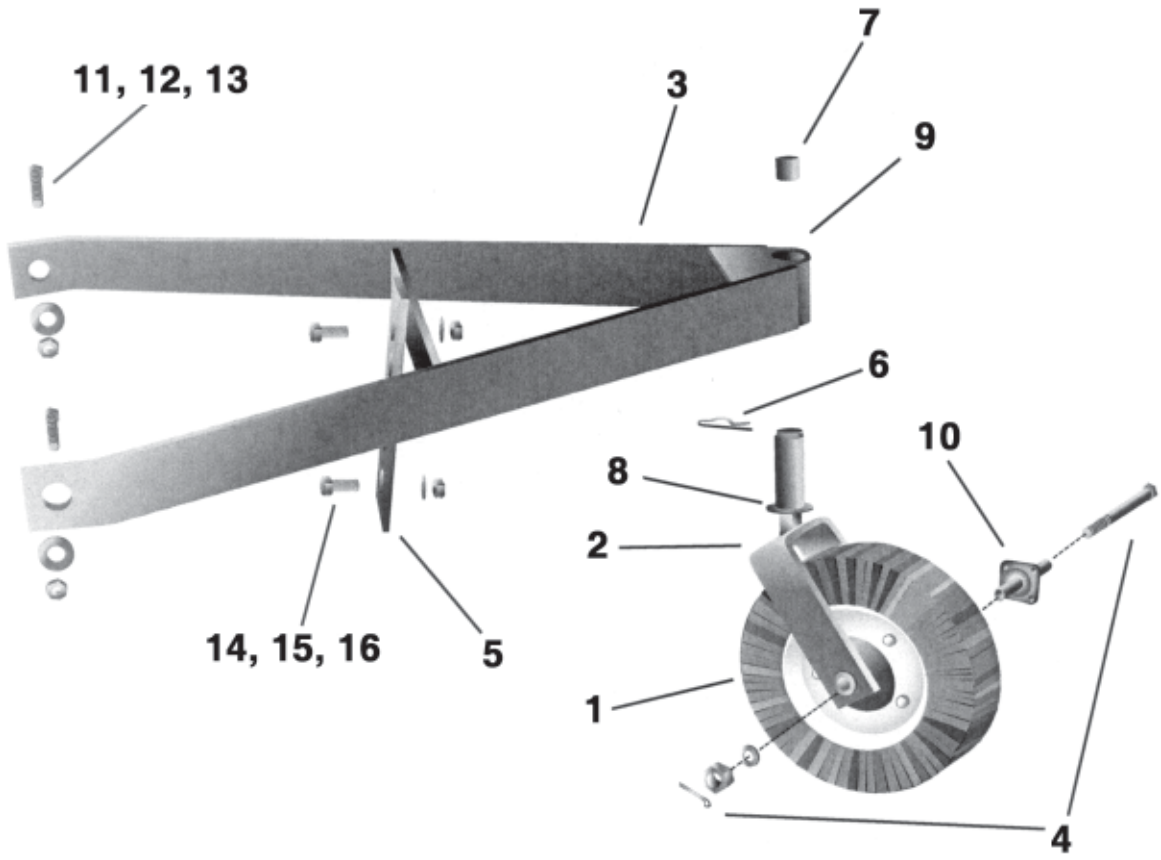
CAUTION

Ref. #3 is a **Grade 2 shear bolt** and is to be used with **shear pin driveshaft only.**

Ref. #3A is a **Grade 8 retaining bolt** and is to be used with **slip clutch driveshaft only.**

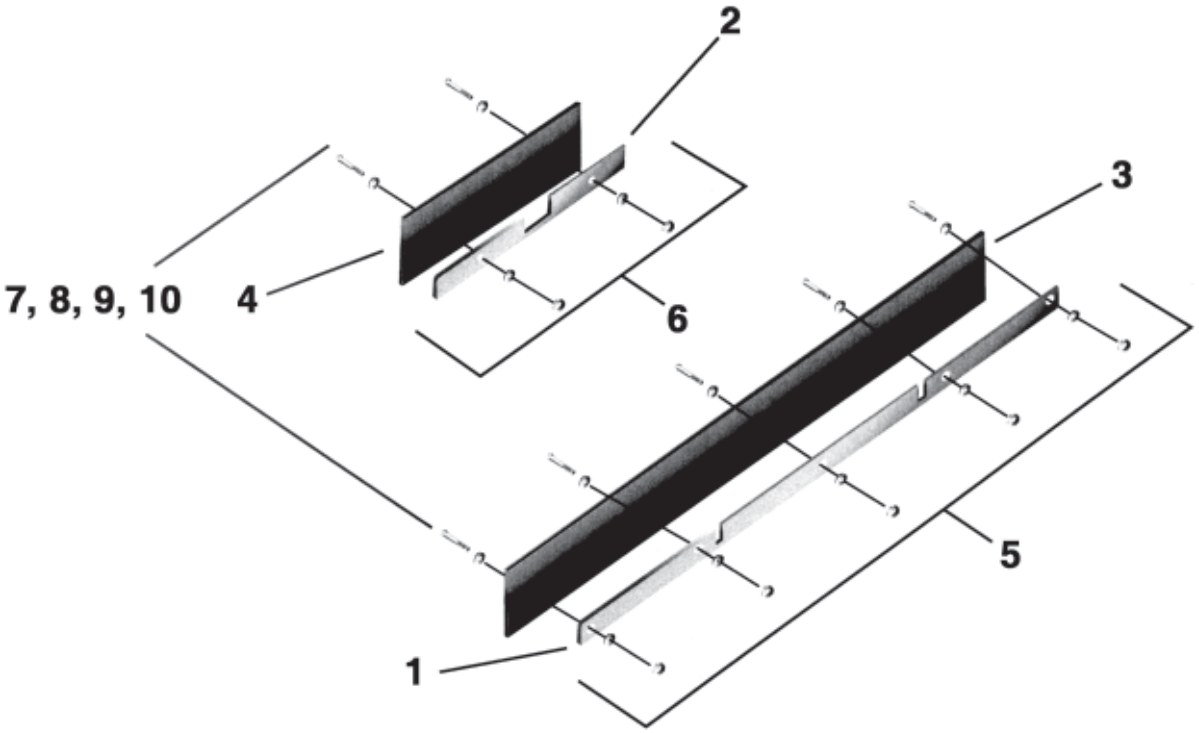
REF#	QTY.	PART NO.	DESCRIPTION
1	1	300131	Seal, Output Shaft 40 HP
2	1	300132	Seal, Input Shaft 40 HP
3	1	300133	Shear Bolt, Nut & Washer (Grade 2)
3A	1	300134	Retaining Bolt, Nut & Lockwasher (**for slip clutch driveshaft only** - Grade 8)
4	1	300135	Snap Ring, Input Shaft
5	1	300136	Breather Fill Plug
6	1	300137	Oil Level Plug

TAILWHEEL ASSEMBLY



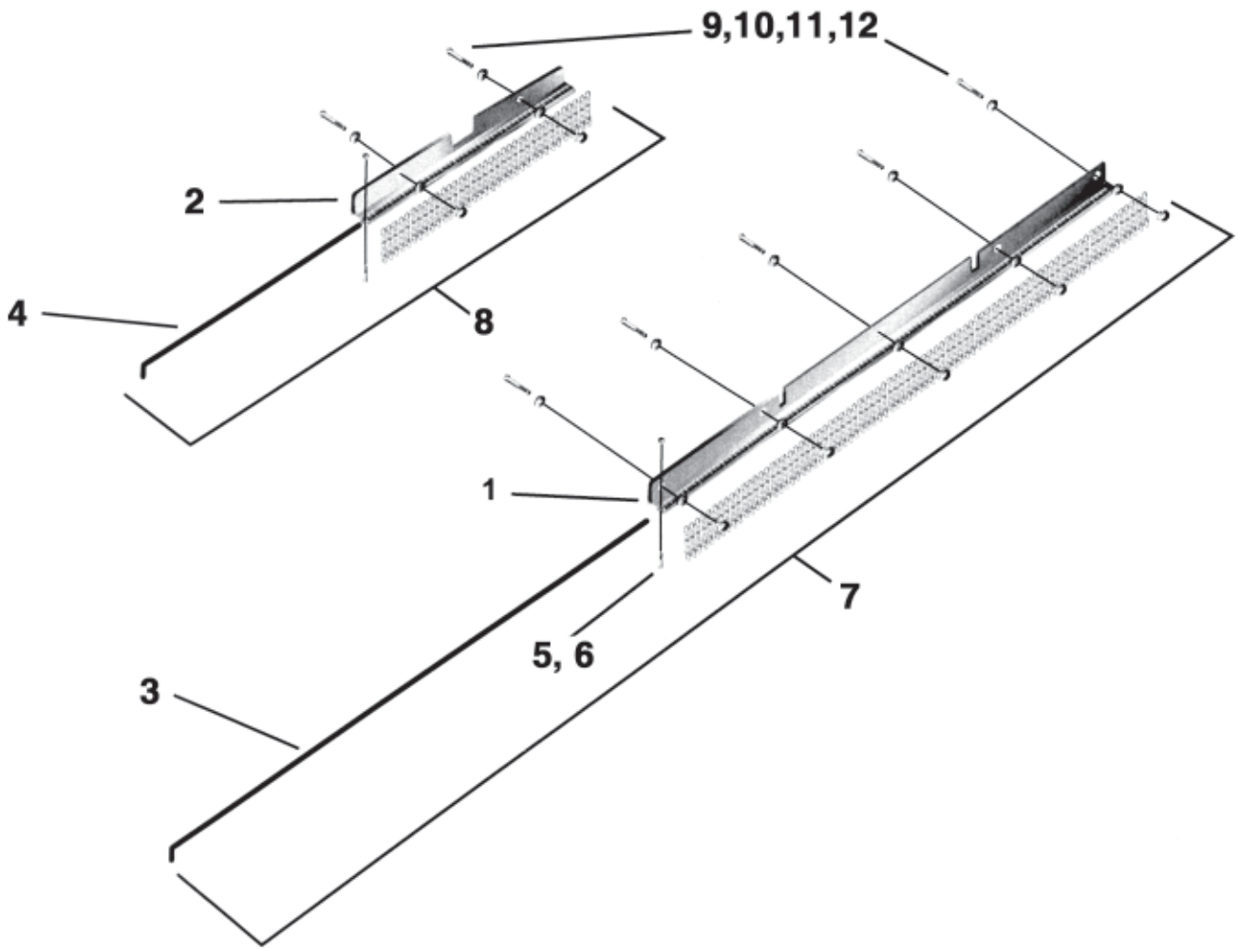
REF#	QTY.	PART NO.	DESCRIPTION
1	1	300127	Tailwheel
2	1	300109	Tailwheel Fork
3	1	300108	A-Frame Assembly (Tailwheel)
4	1	300128	Axle Bolt 1" x 8" w/Flat Washer, Nut, Cotter Pin
5	1	300107	Tailwheel Adjustment Strap
6	1	100114	Cotter Pin
7	1	300129	Bushing (Tailwheel)
8	1	100115	1 1/4 Washer
9	1	100116	Grease Zerk
10	1	300130	Hub w/Lock Washer, Nut (Tailwheel)
11	1	100110	Bolt 3/4" x 2 1/2"
12	3	100111	Flat Washer 3/4"
13	1	100112	Lock Nut 3/4"
14	1	100117	Bolt 5/8" x 2", Grade 5
15	1	100118	Lock Washer 5/8"
16	1	100119	Hex Nut 5/8"

RUBBER BELT GUARD ASSEMBLY



REF#	QTY.	PART NUMBERS RC20-48	RC20-60	RC20-72	DESCRIPTION
1	1	300158	300159	300160	Front Belt Guard Frame
2	1	300161	300161	300161	Rear Belt Guard Frame
3	1	300155	300156	300157	Front Belt
4	1	300162	300162	300162	Rear Belt
5	1	300175	300176	300177	Front Belt Guard Kit
6	1	300178	300178	300178	Rear Belt Guard Kit
7	7	100141	100141	100141	Bolt 5/16" x 3", Grade 5
8	7	100142	100142	100142	Flat Washer 5/16"
9	7	100134	100134	100134	Lock Washer 5/16"
10	7	100135	100135	100135	Hex Nut 5/16"

CHAIN GUARD ASSEMBLY

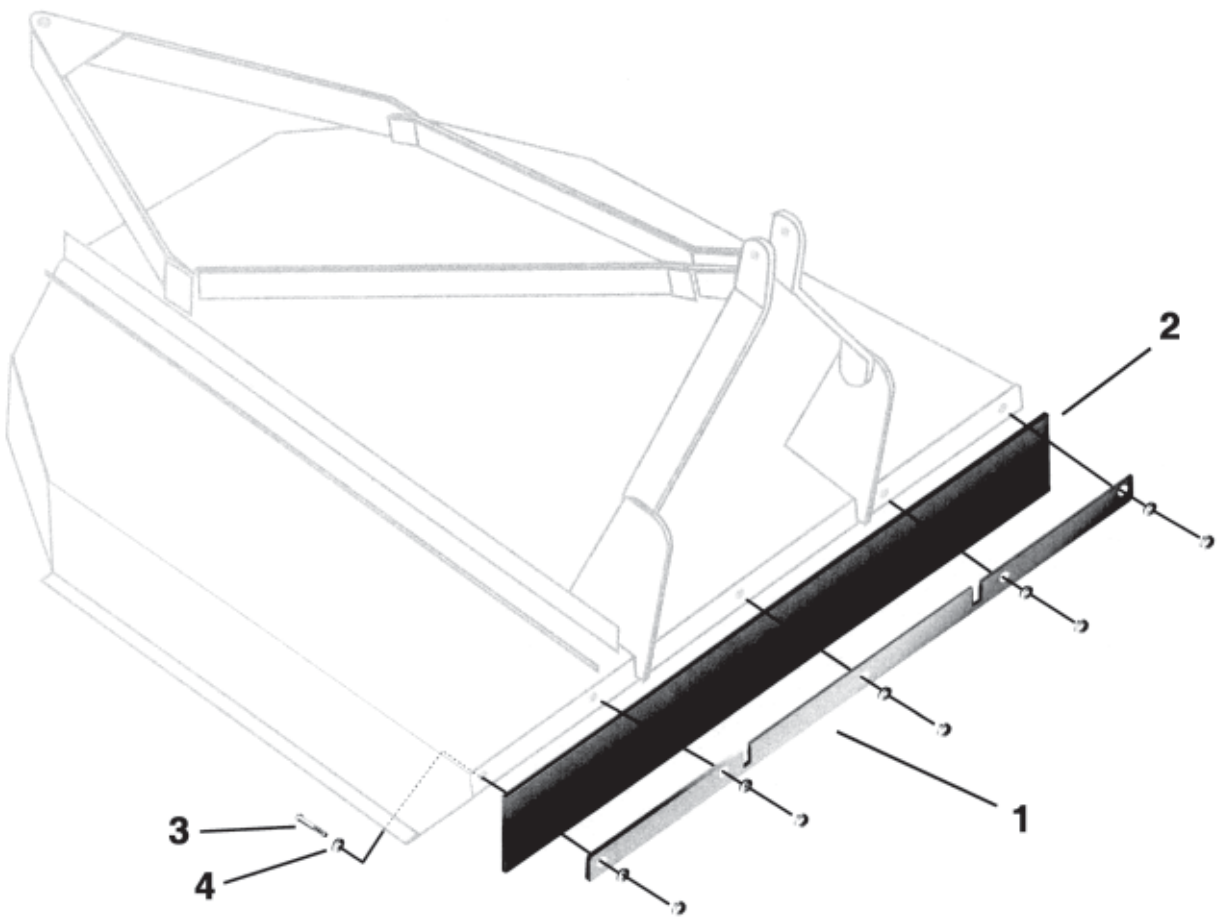


PART NUMBERS

REF#	QTY.	RC20-48	RC20-60	RC20-72	DESCRIPTION
1	1	300163	300164	300165	Front Chain Guard Frame
2	1	300166	300166	300166	Rear Chain Guard Frame
3	1	300167	300168	300169	Front Rod
4	1	300170	300170	300170	Rear Rod
5	1	100144	100144	100144	Retaining Bolt 3/8" x 1 1/2", Grade 5
6	1	100137	100137	100137	Retaining Lock Nut 3/8"
7	1	300171	300172	300173	Front Chain Guard Kit
8	1	300174	300174	300174	Rear Chain Guard Kit
9	7	100141	100141	100141	Bolt 5/16" x 3", Grade 5
10	7	100142	100142	100142	Flat Washer 5/16"
11	7	100134	100134	100134	Lock Washer 5/16"
12	7	100135	100135	100135	Hex Nut 5/16"

SECTION 6 - Rubber Belt Guard Installation

Shields, Guards, and Deflectors are provided for the protection of the operator and bystanders. The Manufacturer strongly recommends the use of Protective Shielding at all times. DO NOT operate the machine without Shields in place.



1. Insert $^{5}/_{16}$" x 3" bolts and flat washers (items 3 & 4) through hole from inside out of rotary mower.

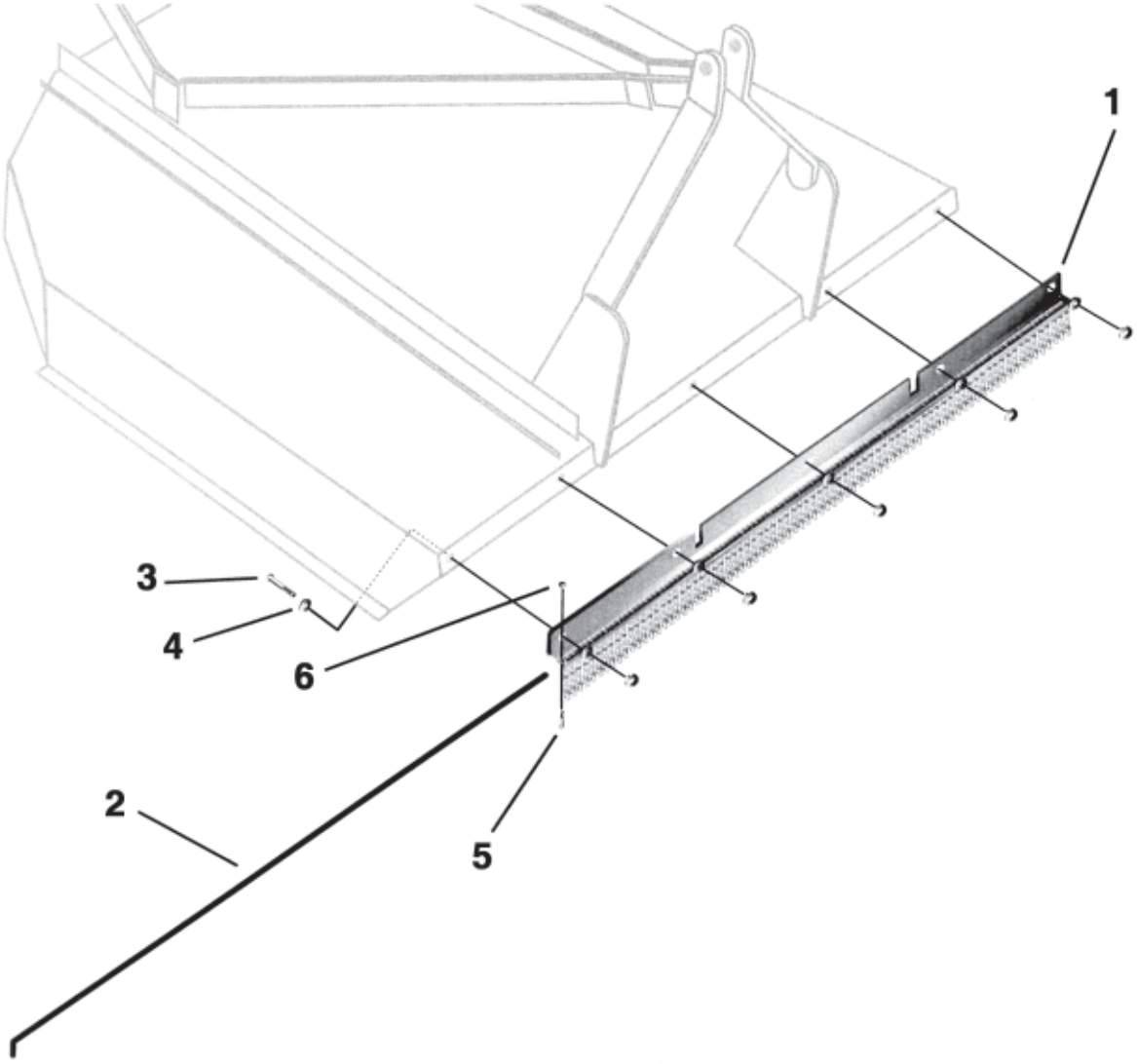
2. Place belt guard (item 2) against tube frame of rotary mower and install front belt guard frame (item 1) flat washers, lock washers, and nuts until all are installed, clamping belt guard between belt guard frame and rotary mower front tube.

3. Repeat process for rear belt guard.

WARNING

ROTARY MOWER MUST BE EQUIPPED WITH FRONT AND REAR GUARDS WHEN OPERATING IN THE VICINITY OF HIGHWAYS OR IN ANY AREA WHERE PEOPLE MAY BE PRESENT.

CHAIN GUARD INSTALLATION



1. Insert $^{5}/_{16}$" x 3" bolts and flat washers (items 3 & 4) through hole from inside out of rotary mower.

2. Place front chain guard (item 1) against tube frame of rotary mower and install flat washers, lock washers, and nuts until all are installed.

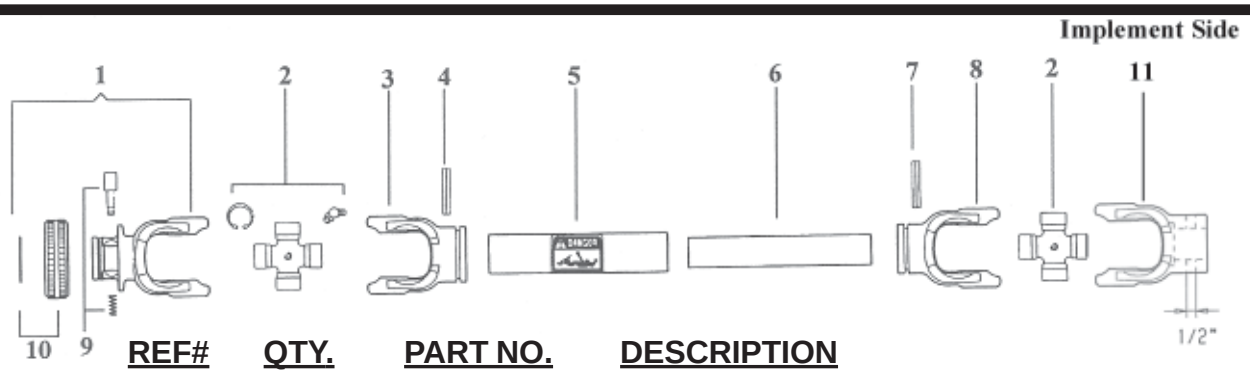
3. Rotate retaining bar (item 2) into a large slot in chain guard frame and install $^{3}/_{8}$" x 1 $^{1}/_{2}$" bolt into slot (item 5). Tighten $^{3}/_{8}$" lock nut (item 6).

4. Repeat process for rear chain guard.

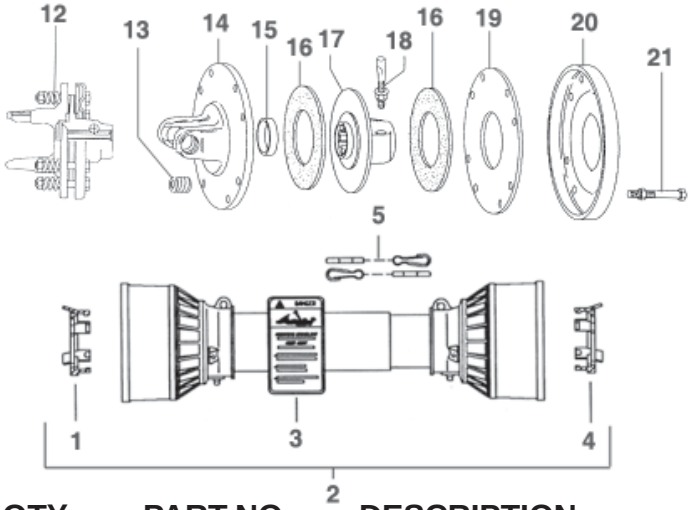
WARNING

ROTARY MOWER MUST BE EQUIPPED WITH FRONT AND REAR GUARDS WHEN OPERATING IN THE VICINITY OF HIGHWAYS OR IN ANY AREA WHERE PEOPLE MAY BE PRESENT.

PTO DRIVELINE



REF#	QTY.	PART NO.	DESCRIPTION
1	1	572050351	RS Collar Yoke 1-3/8" 6-Spline
2	2	41205	Cross Kit Assembly #5
3	1	204056860	Outer Tube Yoke #5
4	1	341053000	Roll Pin O.T. #5
5	1	225701200	Outer Drive Tube #5
6	1	225111200	Inner Drive Tube #5
7	1	341002000	Roll Pin I.T. #5
8	1	204056861	Inner Tube Yoke #5
9	2	403000001	Quick Disconnect Pin Kit
10	2	240003051	RS Collar 5-6
11	1	211054954	Yoke 1-3/8" Round Bore
12	1	638248004	Slip Clutch Assembly FF-2
13	8	351013370	Spring 7mm
14	1	253052101	Flanged Yoke
15	1	258005320	Bushing
16	2	247000061	Lining 160mm
17	1	515210311	Hub 1-3/8" 6-Spline
18	1	408000060	Threaded Bolt Assembly
19	1	248230002	Pressure Plate
20	1	248230006	Cover
21	8	432000006	Bolt & Nut



REF#	QTY.	PART NO.	DESCRIPTION
1	1	255050005	Outer Shield Bearing
2	1	5F05086FF	Shield Kit (Includes Ref. 1-5)
3	1	399141000	Warning Decal
4	1	255050006	Inner Shield Bearing
5	1	252000001	Safety Chain

TROUBLESHOOTING GUIDE

Problem:	Possible Cause:	Possible Remedy:
Leaves a streak of uncut or partially cut grass	Mower not level, side to side	Level 3-pt. hitch linkage on tractor.
	Blade dull or bent.	Sharpen or replace blades.
	Blades unable to cut that part of grass pressed by path of tractor tires.	Slow ground speed of tractor but keep engine running at full PTO rpm. Cutting lower will help.
	Possible build up of material under mower.	Clean rotary mower.
Blade cuts grass lower in center of swath than at the edge.	Height of rotary mower lower at rear or at front.	Adjust rotary mower height and altitude so that rotary mower rear and front are within 1/2" of same height.
Material discharges from mower unevenly, or discharges clumps of grass.	Grass or brush may be too high or thick.	Reduce ground speed but maintain 540 rpm at tractor PTO, or make two passes over material. Raise rotary mower for the first pass and lower for the second pass, preferably cutting 90° to the the first pass. Raise rear of rotary mower high enough to permit material to discharge.
	Grass wet.	Allow grass to dry before mowing. Slow ground speed of tractor but keep engine running at full PTO rpm. Cutting lower will help.
Gearbox overheating.	Low on lubricant	Fill to proper level.
	Improper lubricant type.	Replace with proper lubricant.
	Excessive trash build up around gearbox	Remove trash.
Rotary mower will not cut.	Shear bolt sheared	Install new shear bolt.
Rotary mower will not cut all the time. (slip clutch only)	Slip clutch slipping.	Adjust slip clutch according to guidelines on page 14 (Fig. 4-5)
Excessive vibration.	Possible build up of material on blade.	Clean blade pan.
	Blades locked into position.	Free blades so they swing free.
	Check for even wear on each blade tip.	Weigh each blade. Weight should be within 1 oz. Always replace both blades.
	Broken blade.	Replace blades, in set.
	New blade or bolts not matched with worn blade or bolts.	Replace blades or bolts in sets.
Gearbox noisy.	Low oil in gearbox.	Check oil level. Add oil.

LIMITED WARRANTY

GEARMORE INC.

GEARMORE, INC., warrants each new Gearmore product to be free from defects in material and workmanship for a period of twelve (12) months from date of purchase to the original purchaser. This warranty shall not apply to implements or parts that have been subject to misuse, negligence, accident, or that have been altered in any way.

Our obligation shall be limited to repairing or replacement of any part, provided that such part is returned within thirty (30) days from date of failure to Gearmore through the dealer from whom the purchase was made, transportation charges prepaid.

This warranty shall not be interpreted to render us liable for injury or damages of any kind or nature, direct, consequential or contingent, to person or property. This warranty does not extend to loss of crops, loss because of delay in harvesting or any other expenses, for any other reasons.

Gearmore in no way warranties engines, tires, or other trade accessories, since these items are warranted separately by these respective manufacturers.

Gearmore reserves the right to make improvements in design or changes in specification at any time, without incurring any obligations to owners or units previously sold.

GEARMORE, INC.
13477 Benson Ave.
Chino, CA 91710

Always refer to and heed machine operating warning decals on machine.

The serial number of this product is stored in our computer database, thus submitting a warranty registration card is not required.